DOCUMENT RESUME

ED 126 450 CS 002 811

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TITLE The Behavioral Treatment of Reading Deficits.
PUB DATE 76
NOTE 18p.

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Behavioral Science Research; *Behavior Change; Elementary Secondary Education; Literature Reviews; *Reading Difficulty; *Reading Instruction; Reading Research; *Remedial Instruction; *Remedial Reading

ABSTRACT

Literature related to behavior modification is surveyed to draw implications for the diagnosis and treatment of reading deficits and for the inservice and preservice training of reading teachers. A 39-item bibliography is included. (AA)

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ED126450

The Behavioral Treatment of Reading Deficits

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Abstract

A large body of behavioral literature has evolved over the past 15 years in the area of reading. A survey of this literature has been made with respect to delineating the implications for the diagnosis and remediation of reading deficits offered by behavior modification technology. It has been suggested that the limited utilization of behavior modification technology by reading teachers and specialists be rectified by incorporating behavior modification training into inservice programs and college courses.

The Behavioral Treatment of Reading Deficits

Beginning in the 1960's, an approach known as "behavior modification" or more technically as "applied behavior analysis" has been increasingly utilized in the educational remediation of classroom problems. This behavioral approach involves the direct application of the principles and methods of operant conditioning technology to socially relevant problems such as those problems found in the field of education (Baer, Wolf, & Risely, 1968).

A recent thrust in behavior modification has been in facilitating the acquisition and/or the acceleration of academic responses in such skill areas as spelling (Benowitz & Busse, 1970; Lovitt, Guppy, & Blattner, 1969), arithmetic (Dil & Gotts, 1971; Johnson & Bailey, 1974), history and geography (Glynn, 1970), and printing and writing (Hopkins, Schutte, & Garton, 1971; Smith & Lovitt, 1973; Van Houten, Morrison, Jarvis, & McDonald, 1974).

The academic skill which has received the most attention by behavioral researchers has been in the area of reading, especially in terms of modifying reading deficits. Over a span of approximately 15 years a body of behavioral research in the area of reading has emerged in the literature. Portions of this research literature have been surveyed by several writers. For example, Ford and Fitzgerald (1973) have compiled a very useful annotated bibliography of studies dealing with contingency management in the development of reading skills. Furthermore, reviews of the behavioral literature have been presented in the areas of preschool reading instruction (Apter, Boorer, & Thomas, 1974; McDowell, 1971), reading disabilities (Goldiamond & Dyrud, 1966), instructional-control techniques (Frase, 1968),

and instructional programming in reading (Bloom, 1973).

Considering the large amount of behavioral research directed towards the treatment of reading deficits, it is surprising to discover that little mention is made of behavior modification techniques in current textbooks dealing with the diagnosis and remediation of reading deficits. Consequently, it is this writer's intent to delineate the implications for the diagnosis and remediation of reading deficits that appear evident from the behavior modification literature.

Diagnosis of Reading Deficits

According to Wilson (1972), the remediation of reading deficits "must be in direct response to diagnostic conclusions, necessitating the use of the most suitable educational techniques as solutions to the diagnostic conclusions" (p. 145). However, several behaviorists feel that current diagnostic procedures in reading may lead to faulty conclusions as a result of at least two methodological problems and a preoccupation with etiology.

Test-Taking Behavior

An important methodological problem in the diagnosis of reading deficits concerns the degree to which a child's performance on a reading test represents the child's actual reading skills. Staats, Minke, Goodwin, and Landeen (1967) have stated, "There are many cases in which test results are part of diagnosis and treatment and where the test-taking behavior of the subject prevents accurate appraisal because of motivational deficits" (p. 298).

Consequently, Staats et al. (1967) have suggested that one way of alleviating the problem of motivational deficits is to use reinforcement

procedures to strengthen appropriate test-taking behavior. In maximizing the frequency of appropriate test-taking behavior, reinforcement procedures would be empirically matched to specific testing situations. For example, Camp and Van Doorninck (1971) have indicated that the use of tangible reinforcers may be more effective in setting the occasion for appropriate test-taking behavior within a group testing situation than within an individual testing situation.

Direct and Continuous Measurement

A second methodological problem concerns the indirectness and infrequency of typical diagnostic inventories and/or achievement tests. Lovitt, Schaff, and Sayre (1970) point out that "when measurement is not directly related to instruction, improvement in a pupil's day-to-day performance as the result of an instructional program could go undetected" (p. 1). Lovitt et al. (1970) also have commented that "measurement should be continously obtained in order that interaction between the pupil and the prescribed curriculum may be evaluated" (p. 1).

Accordingly, Lovitt et al. (1970) advocate and employ a method of reading diagnosis which measures directly and continuously reading responses. In using their diagnostic method, Lovitt et al. (1970) obtain three measures which inform the reading teacher of the "speed at which correct and error responses occur and the qualitative relationship between the two rates" (p. 2).

Preoccupation with Etiology

Currently, many reading teachers and specialists focus a large portion of their energy on eradicating the "underlying causes" of a child's reading deficits. A difficulty in learning to read is often ascribed to deficits

in perceptual-motor (de Hirsch, Jansky, & Langford, 1966), neurological (Reed, Reitan, & Klove, 1965), and emotional functioning (Barlow, 1966). Numerous remedial reading programs have treated severe reading deficits indirectly as a symptom while correcting for some underlying problem within the afflicted child.

Diagnosing for etiology assumes little if no educational importance for the behaviorist. Treating the reading deficit directly as the problem, reading failure is viewed by the behaviorist not as a child's failure, but as a failure in the instructional process. According to Wadsworth (1971), "A diagnosis of 'learning disabilities' provides a vindication for many school failures" (p. 34). Furthermore, Hops and Cobb (1973) point out that a knowledge of etiology "may be more important for prevention than remediation. Manipulating genetic and physiological variables is beyond the domain of the educator" (p. 195). Similarly, Haring and Hauck (1969) state:

> By the time reading behavior becomes important to children, however, it is far too late to be concerned about etiology. The concern to the educator is with procedures which will predictably establish reading responses with children having severe reading disabilities. (p. 341)

Remediation of Reading Deficits

The behavioral approach to the remediation of reading deficits has proven to be successful within a variety of settings for different age groups, categories of exceptional children, and reading skills (Ford & Fitzgerald, 1973). Consequently, the behavioral approach can currently offer assistance to reading teachers and specialists with

respect to (a) designing remedial reading programs, (b) specifying the steps of remediation, (c) overcoming motivational deficits, (d) ensuring success, and (e) utilizing nonprofessional personnel.

Designing Remedial Reading Programs

The behavioral designing of remedial reading programs proceeds on the basis of certain general principles such as those stated by Gray, Baker, and Stancyk (1969):

> 1. Reading is a learning task; therefore, it is responsive to the laws of learning.
> 2. Decoding is antecedent to comprehension and therefore, should be attended to first.
> 3. The system should provide success in abundant quantities and should provide frequent and immediate reward for that success.
> 4. Characteristics such as visual perception, I.Q., visual motor coordination, visual and auditory sequencing, etc., etc. are considered not to affect differentially prognosis for skill mastery unless the deficiency is of such a marked and gross degree that it results in reduced functional ability in nonreading activities. (p. 256)

In their experimental reading program for neurologically impaired, mentally retarded, and severely emotionally disturbed children, Hewett, Mayhew, and Rabb (1967) proceeded on the basis of the following general principles:

> 1. Present the child with small increments of learning which gradually increase in difficulty based on the principles of programmed instruction.

2. Immediately reward each correct response the child makes; use social praise and extrinsic motivators and withhold the reward for incorrect responses.

3. Use systematic word review, discrimination exercises, and comprehension questions to consolidate learning.

4. Provide the child with an actual reading experience in a real book in addition to programmed learning of words on a teaching machine.

5. Freely adapt the steps, structure and type of rewards used in the program to insure continued success for an individual child.

6. Maintain detailed records of each of the child's responses to follow his progress, determine his need for program modification, and provide teacher feedback. (p. 36)

Specifying the Steps of Remediation

The behavioral remediation of reading deficits proceeds on the basis of several steps as delineated by Haring and Hauck (1969):

(a) an assessment of the entering skills each student had acquired; (b) specification of terminal reading skills each student should acquire; (c) specification of successive approximations to these terminal reading skills that would be viewed as progress in skill development; and (d) an assessment of the kinds of stimuli which could function as reinforcing events to the individual child. (pp. 341-342)

In addition, behavioral remediation may not begin with the teaching of any reading skills until certain prerequisite behaviors are learned in the remedial setting. Jacobs (1970) notes that "no learning can take

place unless the learner is able to pay attention, concentrate, and respond to appropriate stimuli" (p. 4). Similarly, Hops and Cobb (1973) declare,

> Each child must learn to look at the book before he can learn to read from it, whether it be a basal or phonics reader. Intervention procedures are, therefore, required which facilitate the teaching of necessary survival skills prior to teaching the academic task itself. (p. 196)

Overcoming Motivational Deficits

In working with culturally disadvantaged youth, Staats, Minke, and Butts (1970) maintain that "motivational problems largely underlie educational failure, including that which is disproportionately evidenced among black ghetto youth" (p. 333). In his work with first graders, Holt (1971) suggests that "the commonly held view that children's attention span is relatively short, may, in fact, depend on whether a particular activity has reinforcing consequences" (p. 368). Furthermore, Lahm (1973) states:

> When the contingencies of learning are appropriate, children will function at a higher reading performance level, be more ready to take risks in reducing uncertainty in reading stimuli, and even engage more readily in the reading process, despite an apparent inability to perform within the normal range. This inability may result from motivational deficits which often are disguised as deficits in skills in the reading process. (p. 3696-A)

In overcoming motivational deficits, behaviorists recognize that a child may engage initially in remedial reading tasks only through the contingent use of such primitive reinforcers as food or toys. However,

behaviorists such as Forness (1973) are concerned that the child functions without the use of primitive reinforcers at the conclusion of any remedial program by systematically moving the child "along a reinforcement continuum toward eventual higher-order reinforcers that occur naturally in the classroom environment--reinforcers that are extant in the real world, so to speak" (p. 169). In accomplishing this movement, behaviorists employ the procedures of reinforcement scheduling and pairing higher-order stimuli with lower-order reinforcing stimuli. More recently, behaviorists have begun to employ self-management procedures in which a child can be taught "to assess his own competencies, set his own behavioral objectives, and specify a contingency system whereby he might obtain these objectives" (Lovitt & Curtiss, 1969, p. 49).

Ensuring Success

Gormly and Nittoli (1971) have noted, "Boys who have not experienced much academic success may be highly motivated to participate in the learning situation once they experience that they can be successful" (p. 46). Accordingly, behaviorists specifically maximize the child's success by systematically programming tasks into small steps and reinforcing successive approximations. By ensuring success for the remedial reader, behaviorists increase the probabilty that the reading task itself will become a conditioned positive reinforcing event for the child. Furthermore, studies by Norton (1973) and Lahm (1973) have indicated that the use of positive reinforcement techniques can result in more favorable attitudes towards reading for disabled readers.

Utilizing Nonprofessional Personnel

Given the shortage of reading specialists to offer individualized

instruction to every disabled reader, behaviorists have successfully utilized nonprofessional tutors in individualizing remedial instruction within such programs as the Staats Motivation-Activating Reading Technique (Staats, Van Mondfrans, & Minke, 1967) and Programmed tutoring (Ellson, Harris, & Barber, 1968). In addition, peer tutoring has been effectively utilized by means of implementing low-performance, interdependent group-oriented contingencies (Hamblin, Hathaway, & Wodarski, 1971). Recently, research has been conducted in the development of a supervisory package that might ensure acceptable levels of on-the-job performance by para-professional tutors in a remedial reading program (Barnard, Christophersen, & Wolf, 1974). Consequently, reading teachers and specialists may become increasingly involved in the training and supervision of nonprofessional or paraprofessional tutors, who then provide individualized instruction to the disabled reader.

Training in Behavior Modification

As a result of approximately 15 years of research, a technology based on behavior modification is currently available and is pertinent to the diagnosis and remediation of reading deficits. However, the utilization of behavior modification technology by reading teachers and specialists appears to be limited. Such limited utilization is most likely a result of an information gap between recently evolving technology and current teacher training programs.

Consequently, there is a need to introduce behavior modification training into both inservice and college courses offered to reading teachers and specialists. Such training should include at least a knowledge of the operant analysis of reading, behavior modification techniques, and

behavioral research methodology.

Training in behavior modification can enhance the effectiveness of the reading teacher and specialist in dealing with reading deficits. As behavior modification technology becomes increasingly utilized, greater attention can be focused on using this technology in the prevention of reading deficits.

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